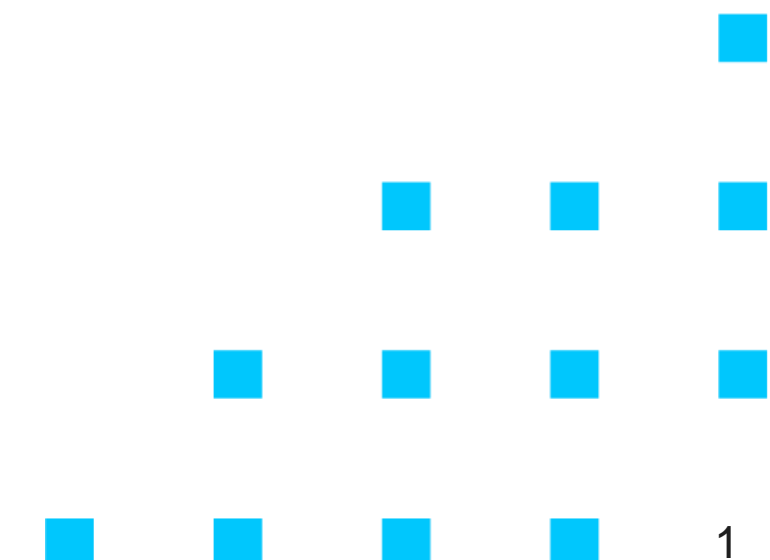


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Intel Foundry Services

Let's Build the Future Together

Gary Martz - Sr. Director Intel Foundry Services
May 5th, 2022

Innovative Foundry with Global Scale

We will offer a **broad portfolio** to the market ...

0.5um to leading edge silicon technology and advanced 3D Packaging

Multi-ISA support
X86 | Arm | RISC-V

Robust IP ecosystem
Intel + 3rd party

Industry leading innovations:
Chiplet Open Platform, LIDAR

... with a **customer-centric** business model ...

Relentless focus on customer service and co-development

Flexible commercial models tailored to customer needs

Industry-focused technology platforms
Auto | Mobile | Compute

\$1B IFS Innovation fund in partnership with Intel Capital

... accelerated by the **power of Intel®**

Deep technology & manufacturing expertise

Robust supply chain at scale

Only US-based foundry with leading-edge R&D

Globally diverse manufacturing footprint

Intel Foundry Services – Complete Solutions

Intel differentiators
available through IFS

World-class foundry offering leveraging the
eco-system

Secure supply

Any Intel Core or Accelerator	X86, AI, Graphics
Any Intel Packaging	EMIB, Foveros, FCBGA with differentiated assembly & test capability
Design Services	Industry-leading Architects, Designers
Any Eco-system Core	Arm, RIS C-V, x86
OSAT network	Use industry OSATs to package IFS wafers, if you choose
Broad Eco-system IP Offering	IP from leading industry IP providers
Design Enablement	Industry standard PDKs Broad EDA & cloud tool enablement
Manufacturing	Only foundry with R&D in the West and robust, geo-diverse manufacturing



Worldwide Factory Network

Robust, geo-diverse supply for wafer and packaging

FAB SORT ASSEMBLY TEST DEVELOPMENT

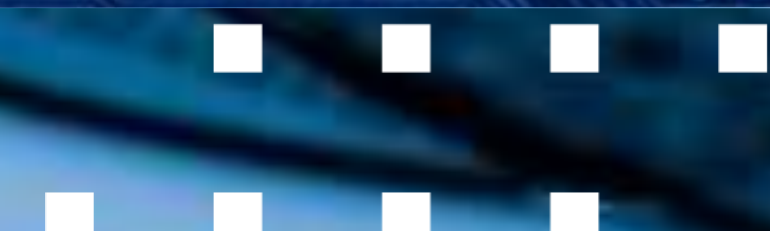
- 6 Global wafer fabrication sites US, EU, and Israel
- 6 Global assembly and test locations
- Investing in both the US and EU

- \$20B for new manufacturing in Ohio
- \$20B for new manufacturing in Arizona
- \$3.5B for advanced packaging in New Mexico
- As much as 80 billion euros in the EU over the next decade
 - Manufacturing and foundry services in Ireland, Italy, Poland and Spain
 - 17B Euro for new manufacturing in Germany
 - 12B Euros for Ireland fab expansion
 - New R&D and design hub in France

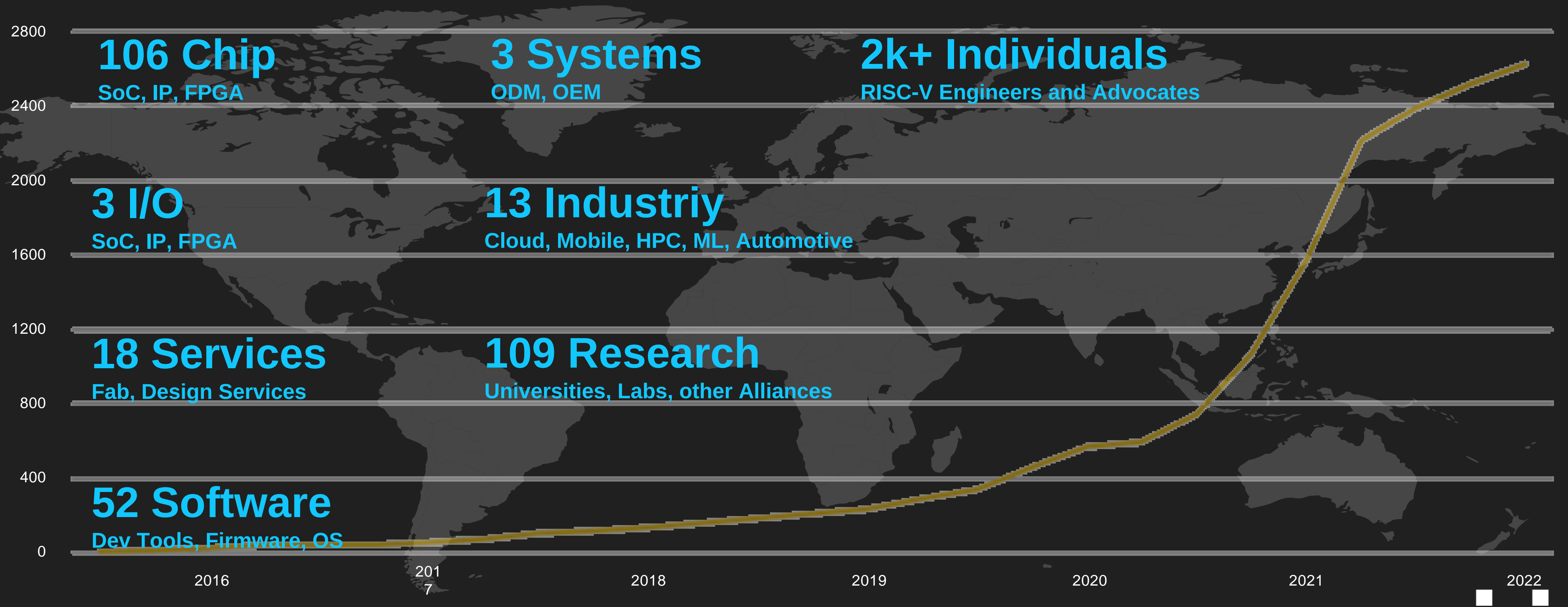
Oregon, USA
Arizona, USA
New Mexico, USA
Licking county, Ohio
Belen, Costa Rica

Leixlip, Ireland
Magdeburg, Germany
Kiryat Gat, Israel
Chengdu, China
Ho Chi Minh City, Vietnam
Kulim, Malaysia

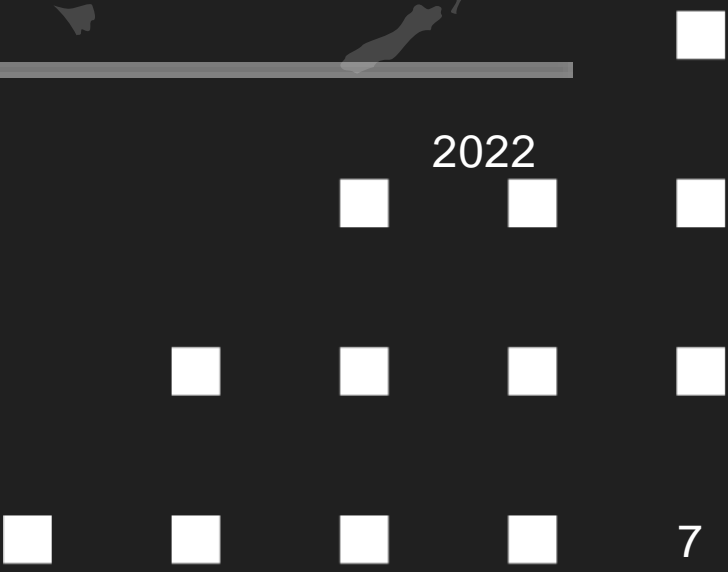
RISC-V Growth



Currently 2,700+ RISC-V Members



Source: RISC-V International



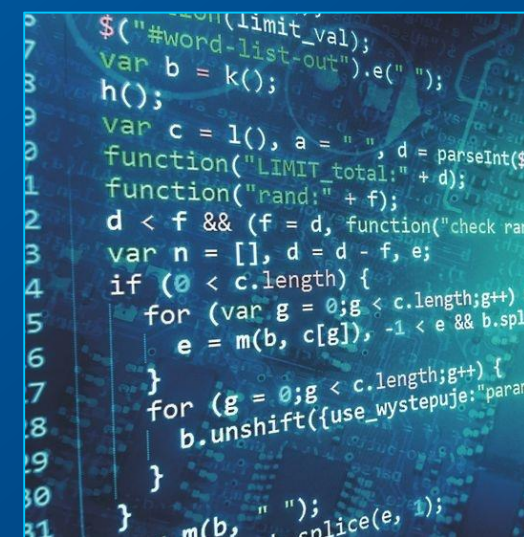
RISC-V Future

Semico Research has estimated that
Demand will continue to grow at a rapid pace,
with the market consuming
more than **60 billion RISC-V CPU** cores by **2025**

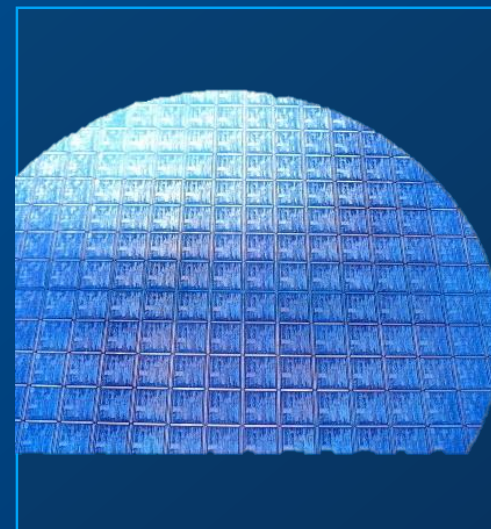
Intel Foundry Services \$1B Innovation Fund

- Equity investments in disruptive start-ups
- Strategic investments for scale partnerships
- Ecosystem investments for IFS scale

IP, Architecture,
Tools & Software



Priority Wafer
Shuttles



Multi ISA
Ecosystem

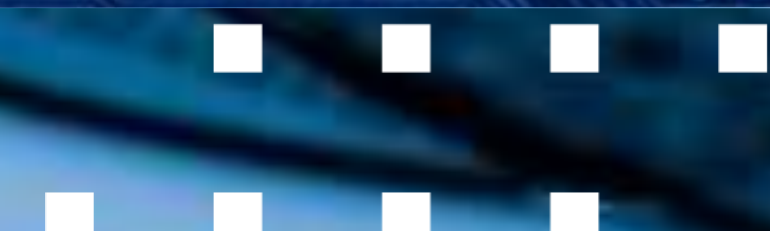
intel x86
arm
RISC-V

Target applications

- Next-gen leaders of semiconductors (AI/ML/DL, Auto)
- IP Providers
- RISC-V ecosystem
- Semiconductor Devices
- Semiconductor Tools/EDA
- Semiconductor manufacturing Equipment/Materials
- Chiplet ecosystem / Next-gen packaging



Working Together

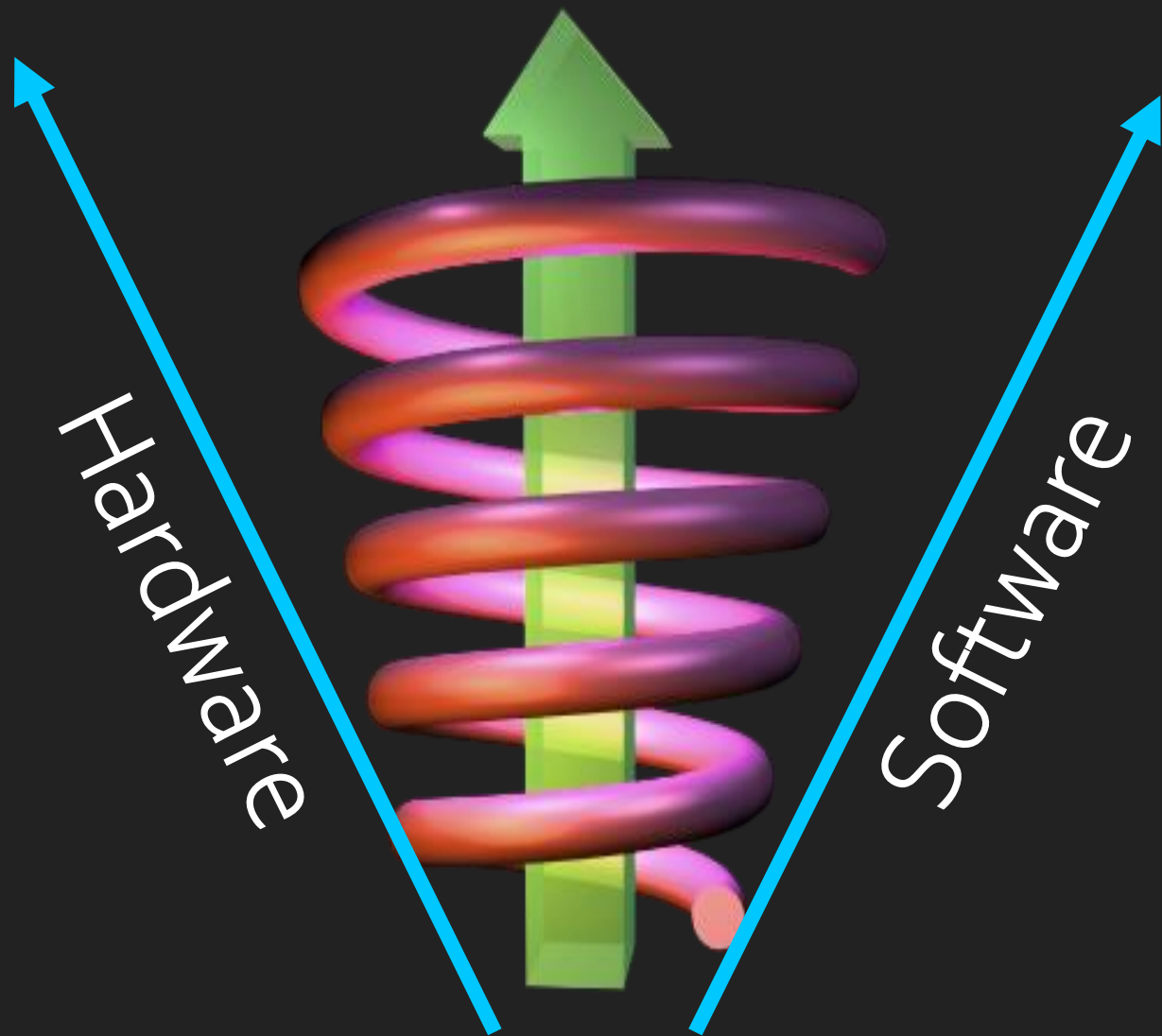


Enabling the growth of the RISC-V Ecosystem

SoC Architecture

Boot, Security, and FW resilience
Isolation/ Partitioning
Power and Thermal Management
Virtualization
Confidential Computing
Reliability, Availability, Serviceability
Performance monitoring, telemetry, debug and trace

Semiconductor Growth



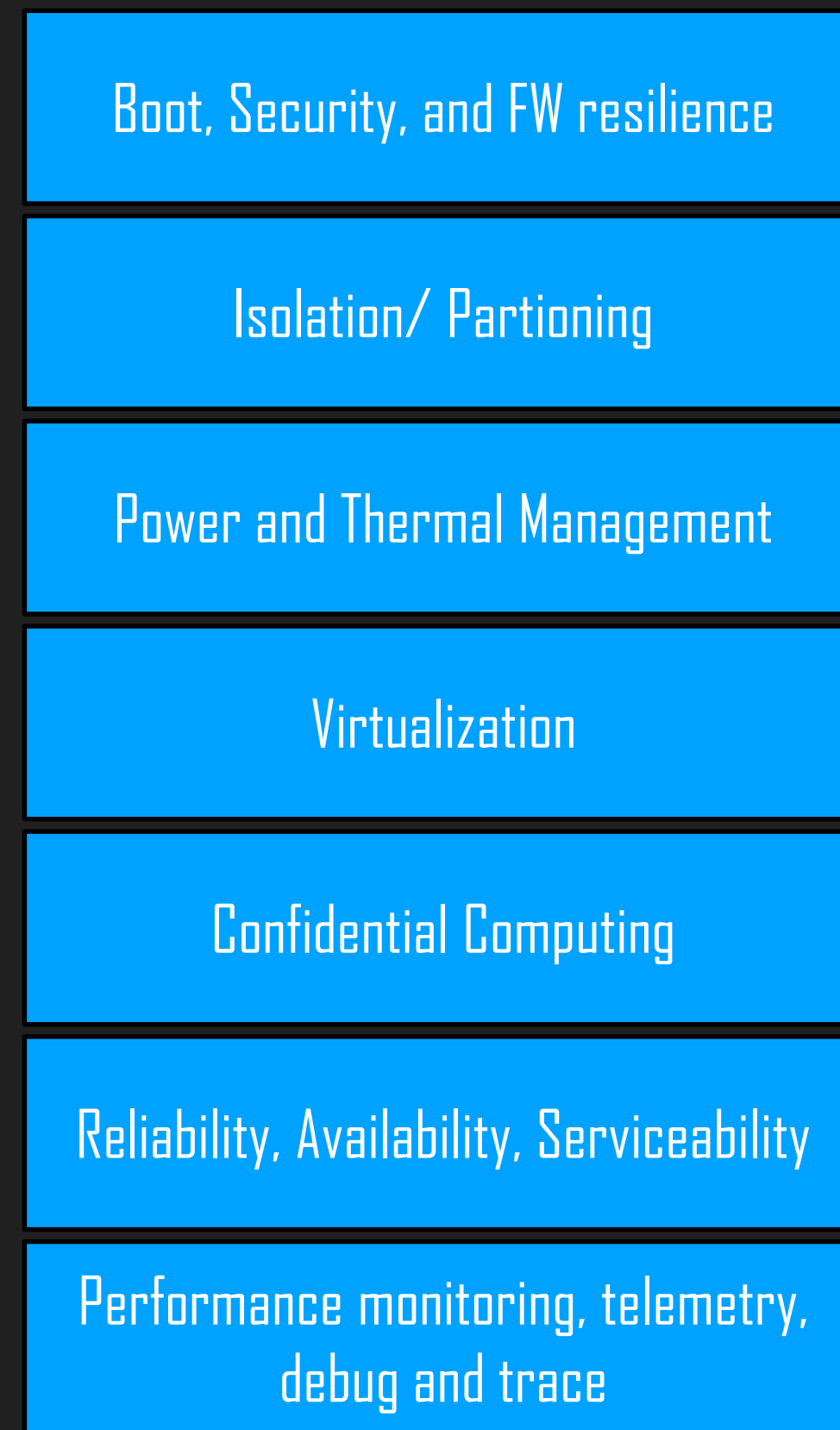
Strategic Collaboration
\$1B Innovation Fund

Open Software

Applications
Operating System
Virtualization
BIOS
Firmware
Tools & Compilers

Enabling the growth of the RISC-V Ecosystem

SoC Architecture

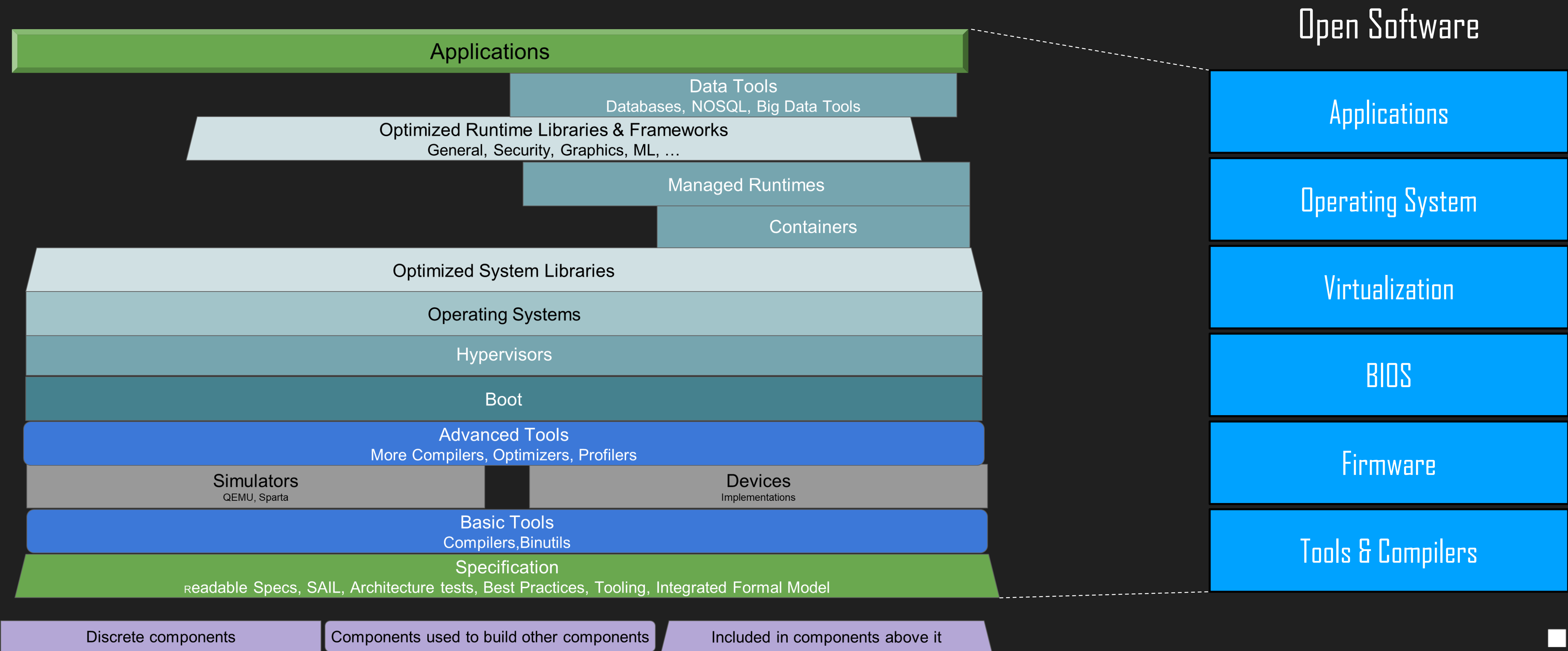


HW Innovation

- Robust E2E secure solutions
- Minimize fragmentation
- Standard internal buses for various bus types
- Fabrics infrastructure for multi-core architecture and coherency for low power to high-performance markets
- Holistic debug solutions and interfaces to cover hardware and software requirements
- Optimize segment specific SoC architecture, e.g. Datacenter RAS, Security, Automotive ASIL-B/D, Mobile Power Management



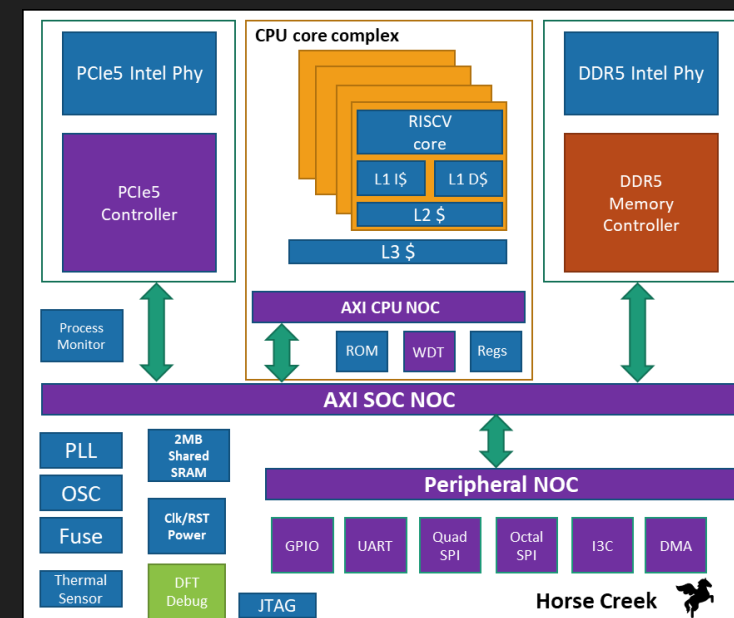
Enabling the growth of the RISC-V Ecosystem



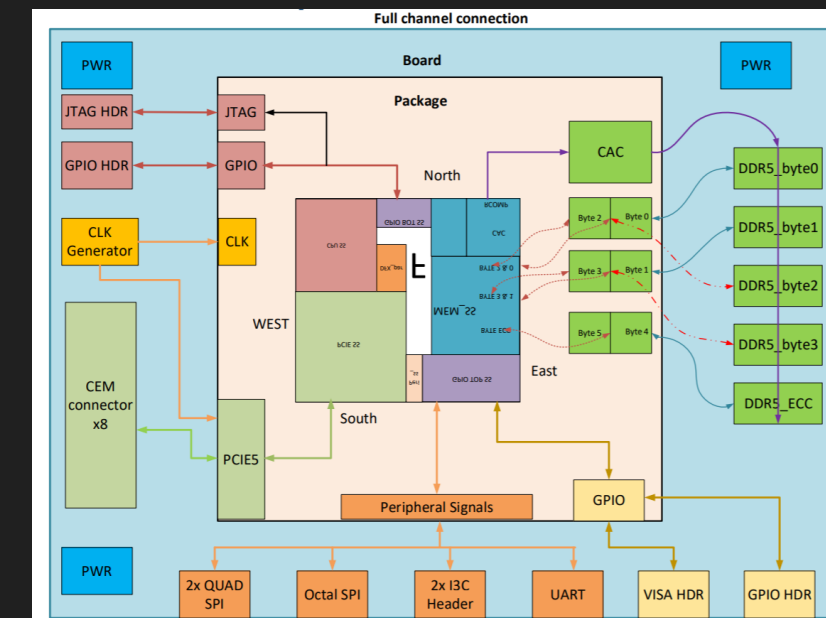
IFS RISC-V Ecosystem Enablement

Grow RISC-V Ecosystem

Horse Creek Silicon



Horse Creek Boards : Software Development Vehicles



Open SW Stack

Applications	AI, Storage, NW, Web Tier, Control
Operating System	Ubuntu, Fedora, Suse, Android
Virtualization	KVM, Docker
BIOS	U-Boot, tianocore, UEFI
Firmware	OpenTBD
Tools & Compilers	GDB, GCC, LLVM

IFS Partners



Highest Performance



Scale up RISC-V AI



Embedded Core



AX45

Thank you

